

WHAT IS CLAIMED IS:

SUB A1  
1. A telephone call and voice processing system comprising:  
switching-circuitry adaptable for receiving a call, wherein the switching  
circuitry is adaptable for connecting the call to a telecommunications device coupled  
to the system; and  
voice processing circuitry adaptable for automatically interacting with the call,  
wherein the switching circuitry and the voice processing circuitry are controlled by a  
single processing means.

SUB A2  
2. The system as recited in claim 1, wherein the voice processing circuitry further  
comprises a signal processing circuitry coupled to the single-processing means.

SUB A3  
3. The system as recited in claim 2, wherein the switching circuitry further  
comprises a digital cross-point matrix coupled to the single-processing means and to  
the signal processing circuitry.

4. The system as recited in claim 3, wherein the switching circuitry further  
comprises:  
a first codec adaptable for receiving the call from a CO, the first codec coupled  
to the digital cross-point matrix.

1 5. The system as recited in claim 4, wherein the switching circuitry further  
2 comprises:  
3 circuitry, coupled to the digital cross-point matrix, adaptable for coupling the  
4 call to an extension telephone.

SUB A-1  
1 6. The system as recited in claim 1, wherein the single processing means is  
2 controlled by a single set of software operable for controlling both the switching  
3 circuitry and the voice processing circuitry.

1 7. The system as recited in claim 3, wherein the telecommunications device is a  
2 facsimile machine, which is coupled to the digital cross-point matrix through a codec.

1 8. The system as recited in claim 3, wherein the voice processing circuitry  
2 includes circuitry for playing stored sound or data to the call.

1 9. The system as recited in claim 8, wherein the circuitry for playing stored sound  
2 or data to the call further includes:  
3 a codec coupled to the digital cross-point matrix;  
4 a transformer coupled to the codec; and  
5 an analog sound source coupled to the transformer.

1 10. The system as recited in claim 8, wherein the circuitry for playing stored sound  
2 or data to the call further includes:

3 digitized stored sound or data stored in a hard disk coupled to the single  
4 processing means;

5 circuitry for transferring the digitized stored sound or data from the hard disk  
6 to a play buffer in the signal processing circuitry; and

7 circuitry for transferring the digitized stored sound or data from the play buffer  
8 to the call.

1 11. The system as recited in claim 3, wherein the telecommunications device is a  
2 modem coupled through a codec to the call.

SUB AS  
1 12. The system as recited in claim 2, wherein the signal processing circuitry further  
2 includes:

3 a DTMF receiver operable for recognizing DTMF tones from the call.

SUB AG  
1 13. The system as recited in claim 2, wherein the signal processing circuitry further  
2 includes:

3 a recording buffer operable for recording the call.

1 14. The system as recited in claim 2, wherein the signal processing circuitry further  
2 includes:

3 a fax tone detector operable for recognizing fax signals from the call.

1 15. The system as recited in claim 2, wherein the signal processing circuitry further  
2 includes:

3 a caller ID modem operable for recognizing caller ID signals from the call.

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1 16. The system as recited in claim 2, wherein the signal processing circuitry further  
2 includes:

3 a call processing tone generator operable for generating and transmitting to the  
4 call standard call processing tones.

1 17. The system as recited in claim 2, wherein the signal processing circuitry further  
2 includes:

3 a conference bridge operable for coupling the call to one or more internal or  
4 external telecommunications devices.

SUB A 77  
1 18. The system as recited in claim 1, further comprising circuitry operable for  
2 recording all or a portion of the call.

1 19. The system as recited in claim 18, wherein the recording circuitry operates in  
2 response to a tactilely initiated activating signal.

1 20. The system as recited in claim 19, wherein the recording circuitry further  
2 comprises:

3 circuitry for coupling a recording buffer in the signal processing circuitry to the  
4 call, wherein the signal processing circuitry is coupled to the single processing means.

1 21. ~~The system as recited in claim 19, wherein the tactilely initiated activating~~  
2 ~~signal is produced when a user presses a record button on an extension telephone~~  
3 ~~coupled to the system.~~

1 22. ~~The system as recited in claim 1, wherein said single processing means is a~~  
2 ~~single microprocessor.~~

1 23. ~~The system as recited in claim 3, further comprising:~~  
2 ~~a play channel in the signal processing circuitry for playing a message to the~~  
3 ~~caller, wherein the message is downloaded from a memory coupled to the single~~  
4 ~~processing means;~~  
5 ~~a DTMF receiver in the signal processing circuitry for receiving DTMF tones~~  
6 ~~sent from the call; and~~  
7 ~~circuitry for connecting the call to the telecommunications device in response~~  
8 ~~to the DTMF tones.~~

1 24. ~~The system as recited in claim 1, further comprising:~~  
2 ~~circuitry for listening to a voice signal at a telephone extension coupled to the~~  
3 ~~system;~~  
4 ~~circuitry for activating a recording sequence to record the voice signal; and~~  
5 ~~circuitry for storing the recorded voice signal in a digital memory.~~

1 25. ~~The system as recited in claim 24, wherein the activating circuitry is tactilely~~  
2 ~~initiated by a user of the telephone extension.~~

1 26. The system as recited in claim 25, wherein the voice signal originated from the  
2 call.

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2 27. The system as recited in claim 25, wherein the voice signal originated from a  
voice mail message stored in the system.

1 28. The system as recited in claim 25, wherein the tactilely initiated activating  
2 signal is produced when the user presses a record button on the telephone extension  
3 coupled to the system.

1 29. The system as recited in claim 24, further comprising circuitry for storing time  
2 and date of call, and caller-id information associated with the call.

1 30. The system as recited in claim 24, wherein the recording of the call can be  
2 activated anytime while the call is coupled to the telephone extension.

1 31. The system as recited in claim 28, further comprising:  
2 circuitry for deactivating the recording of the call in response to a pressing of  
3 the record button by the user.

1 32. An apparatus operable for providing information stored in a telephone  
2 call/voice processor system to a user at a telephone extension without having to call a  
3 resource storing the information, the apparatus comprising:

4 circuitry for receiving an activation signal from the telephone extension;  
5 circuitry for coupling the telephone extension to a play channel of a signal  
6 processing circuitry;  
7 circuitry for downloading the information to the play channel from a memory;  
8 and  
9 circuitry for playing portions of the information to the user via the telephone  
10 extension.

1 33. The apparatus as recited in claim 32, wherein the portions of the information  
2 are played in response to receipt of signals activated by the user on the telephone  
3 extension.

1 34. The apparatus as recited in claim 32, wherein the system is controlled by a  
2 single processing means coupled to the signal processing circuitry, and wherein the  
3 memory is coupled to the single processing means.

1 35. The apparatus as recited in claim 32, wherein the activation signal is tactilely  
2 initiated by the user of the telephone extension.

1 36. The apparatus as recited in claim 35, wherein the activation signal is initiated  
2 by a pressing of a button on the telephone extension by the user.

1 37. The apparatus as recited in claim 33, wherein the information includes a menu  
2 of options for permitting the user to select which of the portions are played in  
3 response to the signals activated by the user.

1 *sub B1* 38. The apparatus as recited in claim 35, further comprising:  
2 circuitry for receiving another signal tactilely initiated by the user of the  
3 telephone extension, wherein the another signal includes coding indicating a content of  
4 the information; and  
5 circuitry for retrieving the information having the content from the memory and  
6 providing it to the play channel.

1 39. The apparatus as recited in claim 38, wherein the signals are activated by the  
2 user while the telephone extension is connected to a call.



1 40. A method for providing information stored in a telephone call/voice processor  
2 system to a user at a telephone extension, the method comprising the steps of:  
3 receiving an activation signal from the telephone extension;  
4 coupling the telephone extension to a play channel of a signal processing  
5 circuitry;  
6 downloading the information to the play channel from a memory; and  
7 playing portions of the information to the user via the telephone extension.

1 41. The method as recited in claim 40, wherein the portions of the information are  
2 played in response to receipt of signals activated by the user on the telephone  
3 extension.

1 42. The method as recited in claim 40, wherein the system is controlled by a single  
2 processing means coupled to the signal processing circuitry, and wherein the memory  
3 is coupled to the single processing means.

1 43. The method as recited in claim 40, wherein the activation signal is tactilely  
2 initiated by the user of the telephone extension.

1 44. The method as recited in claim 43, wherein the activation signal is initiated by  
2 a pressing of a button on the telephone extension by the user.

1 45. The method as recited in claim 41, wherein the information includes a menu of  
2 options for permitting the user to select which of the portions are played in response  
3 to the signals activated by the user.

1 <sup>507</sup>  
2 <sup>31</sup> 46. The method as recited in claim 43, further comprising the steps of:  
3 receiving another signal tactilely initiated by the user of the telephone  
4 extension, wherein the another signal includes coding indicating a content of the  
5 information; and  
6 retrieving the information having the content from the memory and providing  
it to the play channel.

1 47. The method as recited in claim 46, wherein the signals are activated by the  
2 user while the telephone extension is connected to a call.

- 1 48. A method for broadcasting a voicemail message to a plurality of mailboxes  
2 comprising the steps of:  
3 receiving an activation signal from a user at a telephone extension;  
4 prompting the user to enter a first signal for a first of the plurality of mailboxes  
5 to receive a copy of the message;  
6 receiving the first signal;  
7 prompting the user to enter a second signal for a second of the plurality of  
8 mailboxes to receive a copy of the message;  
9 receiving the second signal; and  
10 copying the message to the first and second mailboxes.
- 1 49. The method as recited in claim 48, further comprising the step of:  
2 recording an introductory message by the user to be stored along with the copy  
3 of the message in each of the first and second mailboxes.
- 1 50. The method as recited in claim 48, wherein the activation signal is initiated by  
2 the user while the user is listening to the voicemail message.
- 1 51. The method as recited in claim 48, wherein said first and second signals are  
2 each actuated by single keystrokes.
- 1 52. The method as recited in claim 48, further comprising the step of recording the  
2 message by the user before the copying step.

1 53. The system as recited in claim 1, further comprising:  
2 circuitry for receiving an activation signal from a user at a telephone extension  
3 coupled to the system;  
4 circuitry for prompting the user to enter a first code for a first of a plurality of  
5 mailboxes to receive a copy of the message;  
6 circuitry for receiving the first code;  
7 circuitry for prompting the user to enter a second code for a second of the  
8 plurality of mailboxes to receive a copy of the message;  
9 circuitry for receiving the second code; and  
10 circuitry for copying the message to the first and second mailboxes.

1 54. The system as recited in claim 53, further comprising:  
2 circuitry for recording an introductory message by the user to be stored along  
3 with the copy of the message in each of the first and second mailboxes.

1 55. The system as recited in claim 53, wherein the activation signal is initiated by  
2 the user while the user is listening to the voicemail message.

1 56. The system as recited in claim 53, wherein the first and second signals are each  
2 actuated by single keystrokes.

1 57. The system as recited in claim 53, further comprising circuitry for recording  
2 the message by the user before copying the message to the first and second mailboxes.

SUBA 10  
1 58. In a telephone call and voice processing system comprising switching circuitry  
3 adaptable for receiving a call, wherein the switching circuitry is adaptable for  
4 connecting the call to a telecommunications device coupled to the system, and voice  
5 processing circuitry adaptable for automatically interacting with the call, wherein the  
6 switching circuitry and the voice processing circuitry are controlled by a single  
7 processing means., a method comprising the steps of:

8 listening to a voice signal at a telephone extension coupled to the system;  
9 activating a recording sequence to record the voice signal; and  
10 storing the recorded voice signal in a memory.

1 59. The method as recited in claim 58, wherein the activating step is tactilely  
2 initiated by a user of the telephone extension.

1 60. The method as recited in claim 58, wherein the voice signal originated from  
2 the call to the system.

1 61. The method as recited in claim 58, wherein the voice signal originated from a  
2 voice mail message stored in the system.

1 62. The method as recited in claim 59, wherein the tactilely initiated activating  
2 signal is produced when a user presses a record button on the telephone extension  
3 coupled to the system.

1 63. The method as recited in claim 58, further comprising the step of storing time  
2 and date of call, and caller-id information associated with the call.

1 64. The method as recited in claim 60, wherein the recording of the call can be  
2 activated anytime while the call is coupled to the telephone extension.

1 65. The method as recited in claim 62, further comprising the step of:  
2 deactivating the recording of the call in response to a pressing of the record  
3 button by the user.

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1 66. The system as recited in claim 1, further comprising circuitry for permitting a  
2 user of a telephone coupled to the system to monitor a voicemail message while the  
3 message is being recorded into the user's mailbox.

1 67. The system as recited in claim 66, further comprising circuitry for permitting  
2 the user to converse with a person leaving the message.

1 68. The system as recited in claim 67, wherein the user is able to converse with the  
2 person leaving the message by going on-hook, which terminates a path between the  
3 person leaving the message and the user's mailbox, and which connects the person  
4 leaving the message with the user's telephone.

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